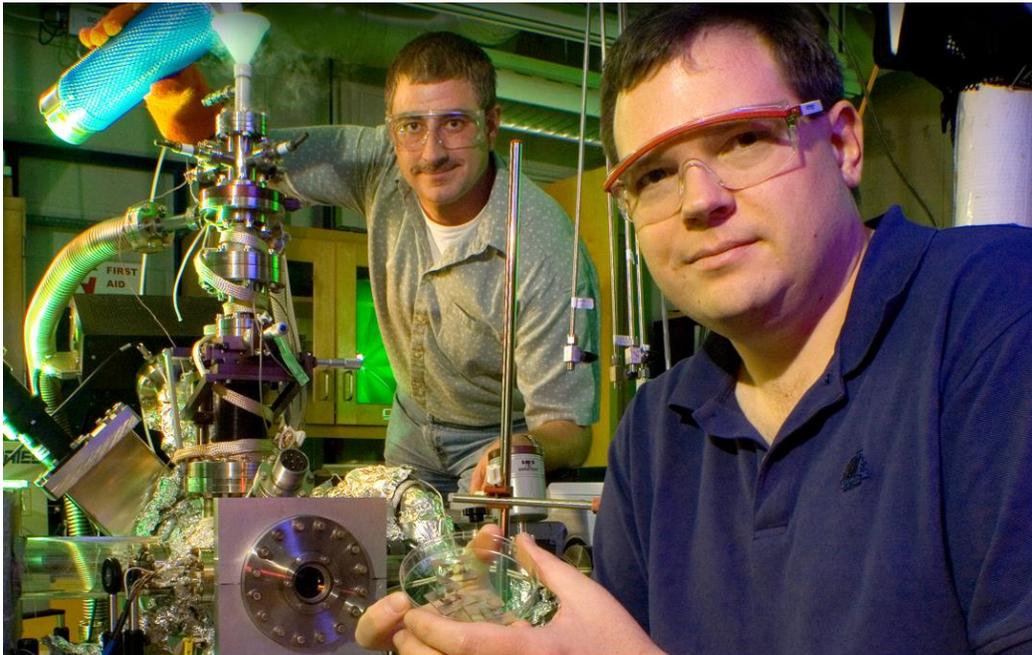




Federal Research and Development Matching Grant Program

May 1, 2017





FEDERAL RESEARCH AND DEVELOPMENT MATCHING GRANT PROGRAM

May 1, 2017

In the 2015 Fiscal Year Capital Appropriations Act, the Delaware General Assembly enacted the Federal Research and Development Matching Grant Program to support federal research and development programs at the University of Delaware, Delaware State University, Delaware Technical Community College and Wesley College. The purpose of the matching grant program is to support work that complements and extends an on-going federally funded project or assists with start-up costs.

As administrator of the program, the Delaware Economic Development Office is required to evaluate the impact and benefits of this program no later than May 1, 2017.

CAPITAL BUDGET

Fiscal Year 2018 Governor's Recommended Bond and Capital Improvements Budget Bill (SB 15)
<http://budget.delaware.gov/budget/fy2018/documents/sb15.pdf>

PROGRAM HIGHLIGHTS

- Created as a result of an addendum to Section 1 of the FY15 Capital Appropriations Act which authorized an appropriation of \$2,000,000 to support the program;
- Administered by the Delaware Economic Development Office;
- Funding requests to be solicited yearly from Delaware State University, Delaware Technical Community College, University of Delaware, and Wesley College;
- Requests to be reviewed by a committee consisting of two representatives from each public institution and three representatives of Delaware-based companies appointed by the Governor;
- The proposed work must complement and extend an on-going federally funded project or assist with start-up costs;
- Allowable budget categories include salaries and benefits for new graduate students and post-doctoral students, supplies and expenses to support the research of these individuals including infrastructure and capital purchases for equipment necessary to launch, support and sustain the research activities;
- Requests are capped at \$100,000 per year.

AWARDS SUMMARY

- 20 awards were approved totaling approximately \$2,000,000 to the following educational institutions:
 - Delaware State University (awarded 8 grants)
 - Delaware Technical Community College
 - Delaware Technical Community College does not apply directly for federal research funds;
 - The college partners with the other institutions and works to support projects funded by these grants
 - University of Delaware (awarded 11 grants)
 - Wesley College (awarded 1 grant)
- Delaware's \$2 million investment in the program was matched by over \$7.7 million in federal funds.
- These projects supported research in areas such as:
 - Alzheimer's disease, Parkinson's disease, breast cancer, laser matter, aging, yeast biology, STEM, neurological health, oyster industry development, post-stroke recovery, and Delaware's soil response to global environment change.

SUPPORTED PROJECTS

Delaware State University

- Alzheimer's Disease Research Program
- CD44-mediated Cell Signaling in Breast Cancer Cells
- A human-aware energy-efficient security framework for memory-restrained Internet of Everything devices
 - **Funding Leverage:**
NSF grant: CNS-1566166: CRII: SaTC: CPS: RUI: Cyber-Physical System Security in Implantable Insulin Injection Systems. **\$174,994.00**. 6/1/2016-5/30/2018.
- Laser Matter interaction in Plasma for Spectroscopy and New Light Sources
- Mathematical Methods and Computer Algorithms for Tissue Quantification and Characterization
- Small Molecule Interventions for Dopaminergic Neuron Loss in a Drosophila Model of Parkinson's Disease
- Therapeutic artificial extracellular matrices and adaptable nanoparticles for the prevention of peritoneal dissemination of ovarian cancer
- Understanding the role and regulation of Pcl6 and Pcl7 in Yeast Biology

University of Delaware

- Building Sustainable Networks for Supporting Teaching of Computer Science
- Decreasing arsenic and cadmium uptake in rice through rice residue management
- Development of a robust oyster industry for Delaware’s economy and environment
- **Funding Leverage:**
 This grant from DEDO has created knowledge related to consumer behavior, food marketing, and behavioral science that has been leveraged to successfully obtain additional external funds to support future research by the Center for Experimental & Applied Economics. External funding leveraged due to the research and funding from DEDO since the start of this project in October 2015:

William Penn Foundation	\$112,000
NOAA Sea Grant Mini Grant	\$15,000
USDA NIFA AFRI Foundational	\$250,000
USDA NIFA AFRI Water for Ag	\$500,000
USDA NIFA AFRI Foundational	\$50,000
TOTAL LEVERAGED FUNDS as a result of the Federal Research and Development Grant	\$927,000

- Development of catalysts for the direct formation of arylsilanes from chlorosilanes
- Effects of concussions on a student-athlete’s neurological health
- Fluorescent microscope purchase critical to the work of five BME Professors
- High Efficiency Tandem Perovskite-Copper Indium Selenide Solar Cell
- How soils across Delaware will respond to global environment change
- Rehabilitation interventions that optimize post-stroke recovery
- Smart Garment (exoskeletal movement assisting devices) tracks users’ activity
- Tetrazine Ligation for Efficient Protein Labeling and Pre-targeted Imaging/Radiotherapy of Cancer

Wesley College

- STEM Cannon Scholar Program

Wesley College reported the following:

Funding Leverage

- \$72,000 from NSF to develop activity-space for the Cannon Scholar living-learning community and a dendro-ecology (to study impact of Delaware sea-level rise on tree-growth) lab

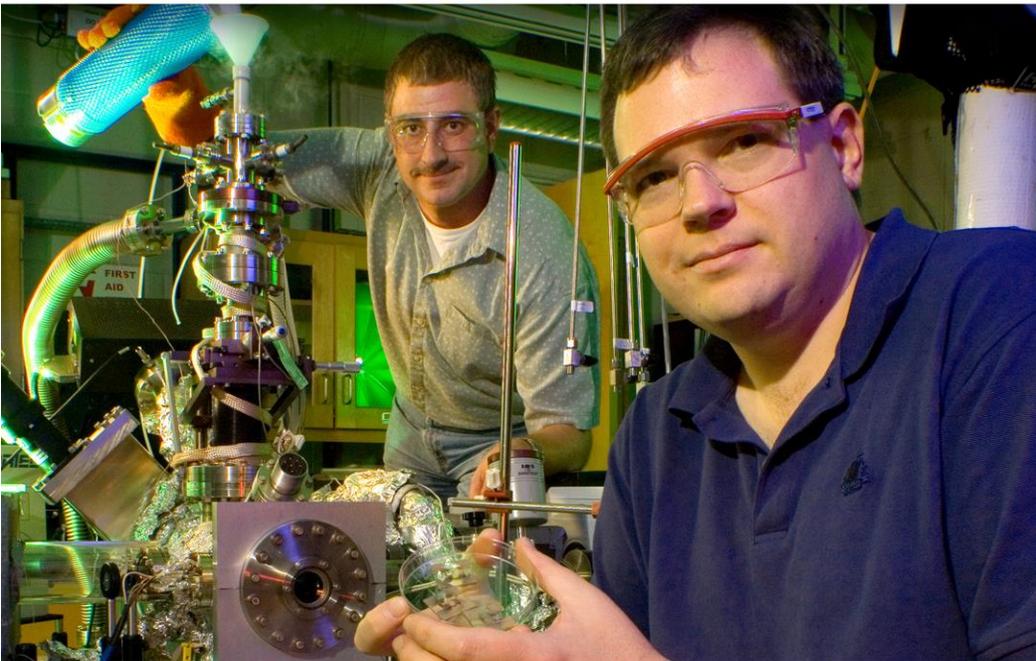
- \$36,000 NASA Space Grant to support a graduate student in dendro-ecology work and an undergraduate student in chemistry.

National Recognition

- The Cannon Scholar Program has earned national recognition (due to a >92% minority student retention rate in STEM). NSF has invited Wesley to conduct a workshop at their national conference (in November 2017).
- The PharmaDiversity Job Board featured the Wesley STEM programs as a model institution to mimic.
- In May 2016, Malcolm J. D'Souza, Ph.D. authored an article for The News Journal; Projecting the Future: STEM Job Prospects Will Boom. The article explained how this DEDO-administered initiative (along with other grants) helps address disparities in STEM higher-education for disadvantaged populations.
- The grant received through the Federal Research and Development Matching Grant Program (administered by DEDO) has been acknowledged in five peer-reviewed scientific publications.



Program Guidelines



Governing the Administration of the Federal Research and Development Matching Grant Program

Section 1: Introduction

Improving the quality and availability of higher education is an essential component of enhancing research efforts to build an informed community and workplace. This effort requires the coordination of federal research and development matching grants. In the 2015 Fiscal Year Capital Appropriations Act, the Delaware General Assembly enacted the Federal Research and Development Matching Grant Program to support federal research and development programs to Delaware institutions. The purpose of the matching grant program is to support work that complements and extends an on-going federally funded project or assists with start-up costs.

Section 2: Background and Authorization

The Addendum to Section 1 of the 2015 Fiscal Year Capital Appropriations Act authorized an appropriation of \$2,000,000 to support federal research and development grants to Delaware institutions. The program will be administered through the Delaware Economic Development Office (“DEDO”). Funding requests will be solicited yearly from the University of Delaware, Delaware State University, Delaware Technical and Community College, and Wesley College and reviewed by a committee consisting of two representatives from each public institution and three representatives of Delaware-based companies appointed by the Governor. The proposed work must complement and extend an on-going federally funded project or assist with start-up costs. Allowable budget categories include salaries and benefits for new graduate students and post-doctoral students, supplies and expenses to support the research of these individuals including infrastructure and capital purchases for equipment necessary to launch, support and sustain the research activities. Requests are capped at \$100,000 per year.

These Guidelines are promulgated under the authority granted to the Director of DEDO by 29 Del.C. § 5005(11), and in accordance with § 51 of the FY2015 Capital Appropriations Act (HB No. 425) to govern the process of applying for research and development grants of such funds.

Section 3: Purpose

The purpose of these Guidelines is to establish (a) procedures governing the administration of the funds appropriated in § 51 of the FY2015 Capital Appropriations Act (HB No. 425) to support federal research and development grants to Delaware institutions (“Fund”); (b) the process for applying for research and development grants or other assistance; (c) pre-approval and post-approval procedures in connection with the issuance of research and development grants or other assistance; and (d) criteria for the Committee’s approval or disapproval of an application for such grants or other authorized assistance for research and development.

Section 4: Definitions

The following words and terms, unless the context clearly indicates a different meaning, shall have the following respective meanings:

“Application” means an application made on such form or forms, together with all relevant attachments, as the institutions and DEDO require in connection with the administration of the funds appropriated under § 51 of the FY2015 Capital Appropriations Act (HB No. 425) to support federal research and development grants to Delaware institutions.

“Applicant” shall have the meaning set forth in Section 6.1.

“Committee” means the Committee created by § 51 of the FY2015 Capital Appropriations Act (HB No. 425) consisting of two representatives from each public institution, the University of Delaware, Delaware State University, Delaware Technical and Community College, Wesley College, and three representatives of Delaware-based companies appointed by the Governor.

“DEDO” means the Delaware Economic Development Office.

“Final Approval” means the final approval of an Application by the Committee in accordance with the procedures set forth herein.

“Fund” means monies appropriated in § 51 of the FY2015 Capital Appropriations Act (HB No. 425) to support federal research and development grants to Delaware institutions.

“Grant” means a grant allocated in accordance with these Guidelines.

“Initial Allocation” means an appropriation of \$2,000,000 to support federal research and development grants to Delaware institutions authorized in the Addendum to Section 1 of the 2015 Fiscal Year Capital Appropriations Act

“Project” means the specific intended use of the proceeds from the Fund.

“State Agency” means any department or agency of the Executive Branch.

Section 5: Research and Development Fund Committee

5.1. Composition. The Fund shall be governed by the Committee, which shall consist of twelve (12) members as follows:

5.1.1 The Director of DEDO or his designee, who shall serve as Chair;

5.1.2 Two (2) representatives from each public institution, the University of Delaware, Delaware State University, Delaware Technical and Community College, and Wesley College, appointed by the Governor; and

5.1.3 Three (3) representatives of Delaware-based companies appointed by the Governor.

5.2. Powers. The Committee shall have the power:

5.2.1 To review and prioritize any applications or proposals for grants in a manner that is consistent with § 51 of the FY2015 Capital Appropriations Act (HB No. 425);

5.2.3. To authorize DEDO to grant funds from the Fund; and

5.2.4. To enlist the assistance of state agencies to review grant applications, to contract for consultation or expert services in connection with the effectuation of its mission, and to have such other powers as are necessary to conduct the affairs of the Fund in accordance with the purposes set forth herein.

5.3. Meetings.

5.3.1 Meetings of the Committee shall occur at least quarterly.

5.3.2 All meetings of the Committee shall be noticed and conducted in accordance with Delaware's Freedom of Information Act ("FOIA"), 29 Del.C. § 10001 et seq.

5.3.3 Regular meetings of the Committee shall be held at the date, time, and location designated by the Chair, or in the absence of action by the Chair, by at least six (6) members. Members may attend meetings in person or via phone or teleconference.

5.3.4 A quorum shall consist of a majority of the members of the Committee. At any noticed meeting at which a quorum is present, any power of the Committee may be exercised, including the power to vote upon proposed grants or other uses of the Fund. If at any meeting, less than a quorum is present in person or by phone or teleconference, the Committee may adjourn the meeting and re-notice it at such time as a quorum may participate.

5.3.5 The consent of a majority of the Committee members present shall be required for approval on any vote.

5.3.6 The Chair shall appoint a person to keep minutes of all meetings. DEDO shall maintain such minutes in accordance with 29 Del.C. § 10004(f). A copy of the minutes shall be circulated to each Committee member within two weeks after each meeting.

5.4. Vacancies.

5.4.1 Any Committee member may resign at any time, and such resignation is effective immediately upon notice to the Chair.

5.4.2 Any vacancy occurring in the Committee shall be filled by an appointment of the Governor the agency or agencies that appointed such member.

Section 6: Grants

6.1. Applicants. The University of Delaware, Delaware State University, Delaware Technical and Community College, and Wesley College.

6.2. Eligible Projects. The proposed work must complement and extend an on-going federally funded project or assist with start-up costs. Allowable budget categories include salaries and benefits for new graduate students and post-doctoral students, supplies and expenses to support the research of these individuals including infrastructure and capital purchases for equipment necessary to launch, support and sustain the research activities. Requests are capped at \$100,000 per year.

Section 7: Application Procedures

7.1 Obtaining and Submitting Applications.

7.1.1 Applicants may obtain Application forms by:

7.1.1.1 Downloading the Application from the DEDO website at <http://dedo.delaware.gov/>;

7.1.1.2 Requesting an Application by contacting the Delaware Economic Development Office by phone (302) 739-4271, or by fax at (302) 577-8499; or

7.1.1.3 Mailing a request for Application to the Delaware Economic Development Office, Attention: Deputy Director Bernice Whaley; Carvel State Building, 820 North French Street, 10th Floor, Wilmington DE 19801.

7.1.1.4 The Application must include a one page Bio-Sketch. If the Application is for the extension of a federal grant that is part of an ongoing federally funded project with at least one year of federal funding remaining (from the start of the matching award), and has already been peer reviewed, the Applicant must submit the notice of award and abstract and should clearly demonstrate how the state funds will be used to extend the research objectives/goals beyond what is already federally funded. The Applicant will provide the number of personnel supported, such as graduate students or post doctorates, can be directly funded; and

the extent to which the research will align with the strategic research goals of the home institution. The Application will further provide preliminary results that will be leveraged either to renew the current federally funded award or to generate a new federally funded project.

7.1.1.5 If the Application is for start-up funding, the Application will provide a letter from Department Chair detailing institutional research support for the Principal Investigator (PI) stating how these state start-up funds will help leverage existing research infrastructure to secure federal funding for the PI. The Application will provide a Bio sketch of the PI detailing adequate training to pursue federal funding, e.g. at least 1) PhD and post doc training in a lab /group and 2) publication record by the PI.

7.1.2 Completed Applications, along with any required documentation, may be submitted online, via email, or by mail in accordance with procedures adopted by DEDO.

7.2 Confidentiality. Applicants may designate certain information as, proprietary or otherwise confidential pursuant to the Delaware Freedom of Information Act, 29 Del. C. ch. 100 ("FOIA"). Consistent with FOIA, DEDO will take such measures as are appropriate to limit disclosure of such information if required by law.

7.3 Consideration of Applications by the Committee

7.3.1 Upon receipt of an Application for a grant from the Fund seeking funds from the Initial Allocation, DEDO will make an initial review.

7.3.2 The Director of DEDO may request another State Agency, or any other entity with expertise relevant to the consideration of the application, for additional review if the Director deems that it is necessary or desirable to do so.

7.3.3 The Committee will consider the proposal at the next scheduled meeting.

7.3.3.1 The Committee will consider the following criteria in evaluating each proposal:

- a) Whether participating students are minority, disabled or first generation students;
- b) Whether the participating work is related to a STEM (Science, Technology, Engineering or Mathematics) field;
- c) Purpose of the Research Grant;
- d) Consistency of the strategic research goals with the mission and vision of the home institution;
- e) Scientific value of the research effort;

- f) Whether the funds will leverage existing research or infrastructure to secure federal funding;
- g) Potential economic impact;
- h) Whether the research will be proprietary or the basis of a patent application;
- i) Percentage of funds requested will be anticipated to remain in Delaware; and,
- j) Any other relevant criteria consistent with the purpose of Section 51 and these Guidelines that the Committee deems appropriate.

7.3.4 The Committee may:

7.3.4.1 Approve the Application in the amount recommended by the Reviewing Agency;

7.3.4.2 Approve the Application, but for an amount other than that which was recommended by the Reviewing Agency;

7.3.4.3 Deny the Application; or

7.3.4.4 Recommend further review or information.

7.4. In the event the Committee approves an Application, the Applicant shall be issued a commitment letter outlining the terms and conditions of the Final Approval. The commitment letter must then be accepted by the Applicant and returned to DEDO. The Applicant shall be bound by the terms and conditions set forth therein.

7.5. In the event the Committee denies an Application, DEDO will advise the Applicant of the Committee's action in writing. The notice of denial to the Applicant will inform the Applicant that the denial does not preclude the Applicant from applying to the Committee with respect to the same project after six months from the notice of denial, or requesting the consideration of other unrelated projects.